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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/601,383

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Luca Pusterla

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PHILADELPHIA, PA 19103

EXAMINER

GAKH, YELENA G

ART UNIT

PAPER NUMBER

1743

MAIL DATE

DELIVERY MODE

07/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/601,383	Applicant(s) PUSTERLA ET AL.	
	Examiner Yelena G. Gakh, Ph.D.	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Amendment filed on 03/01/07 is acknowledged. Claims 4-9 are cancelled. Claims 1-3 and 10-11 are pending in the application.

Response to Amendment

2. Rejection of the pending claims under 35 U.S.C. 112, second paragraph, is withdrawn light of the amendment. All other rejections established in the previous office action are maintained.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-3 and 10-11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,067,800. Although the conflicting claims are not identical, they are not patentably distinct from each other because while the gas to be analyzed in the patent is hydrogen or oxygen and the gas to be analyzed in the instant application is helium, the method utilizes the same idea of using a pure argon or a mixture of argon and the gas to be analyzed (hydrogen/oxygen or helium respectively) as a counter-flow gas with specifically defined ratios of flow rates of the gas to be analyzed. Claim 1 recites: "the method comprising employing as a counterflow gas in a separation zone of an ion mobility spectrometer *pure argon* or a mixture of argon and the gas to be analyze".

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. **Claims 1-3 and 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ketkar et al. (EP 1154268 A2) in view of Nishina et al. (US 6,653,144 B1).

Ketkar teaches "a method for operating an ion mobility spectrometer used to detect trace atmospheric impurities in gases", which eliminates interference from the bulk inert gas by quenching bulk inert gas ions during analysis when mixing the bulk gas (e.g. N₂) with the reagent gas (e.g. Ar) (see Title, Abstract and col. 3, [0017]). A drift (counterflow) gas is conventionally a purified sample gas, i.e. the bulk inert gas, see col. 5, [0028]. Thus adding Ar to a sample gas or a drift gas quenches N₂ ion clusters and allows analyzing impurities in N₂. In one of the embodiments pure argon is used as a drift gas, see col. 7, [0038].

Ketlar does not teach a method for detecting impurities specifically in a helium gas with various combinations of helium and argon used as a sample and a drift gases.

While the disclosure of US 6,653,144 is an obvious translation from the original Japanese document and therefore is not always clear, it can be understood that Nishina teaches a method for detecting ultra small quantities of impurities in He gas by mixing a purified sample gas with

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Ag gas in 0-50% amount, see col. 7, lines 38-40, and using different combinations of He and Ar as sample and drift gases.

It would have been obvious for any person of ordinary skill in the art to expand Ketkar's method to detecting trace impurities in helium gas, as taught by Nishima, because both Ketkar and Nishima demonstrate improving detection capabilities and selectivity of ion mobility spectrometry by adding a reagent gas (argon) to a sample gas (helium) for up to 50% of Ar concentration and using as a drift gas pure helium (which is a conventional drift gas when the sample gas is helium with impurities), or pure argon, as taught by Ketkar, or the same mixture of helium and argon, as the one comprising impurities, but purified, again according to conventional usage of a purified sample gas (which is now a mixture of helium and argon), because both Ketkar and Nishima demonstrate that formation of ion clusters of the bulk gas (helium) with reaction argon gas shifts ion mobilities of the bulk gas and thus allows detecting trace impurities, which otherwise are hindered by the ions of the bulk gas.

Nishima indicates: "the composition (mixed ratio) or the added amount of the purified gas to be added to the outflowed gas, can be set according to the main components of the sample gas, the impurities to be analyzed, the kinds of main purified gas and the sub-purified gas and the like. In the above example, the mixed ratio can be selected by properly setting the flowing amount from both the mass flow controllers (40, 41)" (col. 6, lines 51-59). This statement provides obviousness for any person of ordinary skill in the art to optimize the ratio of argon and helium in the gas mixtures, as well as the ratio of their flow rates recited in claims 2-2.

Providing a purified counter-flow gas from the same source as the sample gas by separating the sample gas into two portions, one of which is passed through the purifier is a conventional analytical technique.

Response to Arguments

7. Applicant's arguments filed 03/01/07 have been fully considered but they are not persuasive.

Double Patenting Rejection: claim 1 of the related patent US 7,067,800 specifically recites applying pure argon as a counterflow. Therefore, double patenting rejection is sustained.

Prior Art Rejections: the examiner did not quite understand the Applicants' arguments regarding the combination of Ketkar's and Nishina's references, which covers the subject matter of the

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instant claims; it is not apparent, as to how a difference in pressure (reduced vs. atmospheric) applied to the drift gas is related to the subject matter of the disclosure of the instant application and the references? The essence of Ketkar's invention consists in shifting the mobility peak of the bulk gas relative to that of impurities to avoid interference by adding a "reagent gas", in particular Ar, to the sample gas. This is not affected by the pressure, atmospheric or reduced, under which the drift gas is moving. Further, it is not clear what the Applicants mean by their statement, "there would have been no reasonable expectation of success in combining Nishina, which teaches the analysis of helium, with Ketkar, which teaches the analysis of nitrogen and oxygen". Ketkar teaches "a method for operating an ion mobility spectrometer used to detect trace atmospheric impurities in gases". The Abstract of the disclosure does not refer to any specific impurities or a specific bulk gas, and the major part of the disclosure demonstrates that the method is of a general nature and is applicable to different impurities in different bulk gases. Ketkar indicates: "[0024] In the first embodiment, the invention consists of adding a reagent gas to the ionization source of the ion mobility spectrometer to avoid the interference problems. The reagent gas can be chosen to tackle a specific interference problem". As it is clear from Ketkar's disclosure, the main problem that Ketkar is solving with his invention is not related to the nature of impurities and/or the bulk gases, but rather to the problem of measuring traces with the background of the bulk gases in which impurities are present. The method taught by Ketkar is not affected by the nature of the impurities and/or the bulk gas. He is using detecting of oxygen impurities in bulk nitrogen as one of the examples. Nishina teaches the method of detecting ultra small quantities of impurities in helium. The examiner does not see any basis for Applicants' doubts that applying Ketkar's method to Nishina's analytes would have a reasonable expectation of success.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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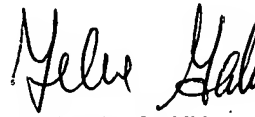
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

07/15/07


YELENA GAKH
PRIMARY EXAMINER